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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,336	09/08/2003	Toshiaki Tsuda	Q77365	9220

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SUITE 800  
WASHINGTON, DC 20037

EXAMINER

RIELLEY, ELIZABETH A

ART UNIT PAPER NUMBER

2879

DATE MAILED: 07/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/656,336

Applicant(s)

TSUDA ET AL.

Examiner

Elizabeth A. Rielley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Response to Amendment*

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Amendment filed 6/22/06 has been entered and considered by the Examiner. Currently, claims 1-6 are pending in the instant application.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uemura et al (US 20020158580) in view of Torikai et al (US 6320314).

In regard to claim 1, Uemura et al ('580) teach an arc tube for a discharge bulb (1; figures 9 and 10; paragraphs 70-74) in which both ends of a light emitting tube inserting electrodes (1a1; paragraph 40) respectively are sealed and a closed space having the electrodes opposed to each other (see figure 1) and filled with a light-emitting substance (not shown in figures; paragraphs 4, 9, 42, and 59) with a rare gas for starting is provided in the light emitting tube (paragraph 42), wherein the light-emitting tube

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comprises translucent ceramics (paragraph 41) formed substantially cylindrically (see figures 1, 9 and 10) and has a ratio  $d/L$  of an outside diameter  $d$  to a whole length  $L$  ranging from 0.2 to 0.5 (Uemura's outside diameter is OD in figure 9, paragraph 75 has OD = 6.5 mm; whole length in  $L+p_2+p_2$  figure 10, paragraph 75 has  $L=4.2\text{mm}$  and  $p_2=7\text{mm}$ ; so the Applicant's " $d/L$ " is Uemura  $6.5/18.2=0.4$ ). Uemura continues to teach that both ends of the light emitting tube are sealed (see figure 1). Uemura et al ('529) are silent regarding the limitation that the sealant are pipes made of molybdenum. Torikai et al ('314) teaches electrodes fixed and held by pipes (7; see figure 1; column 2 lines 19-20) made from molybdenum (column 2 lines 20-21), in order to create a functional gradient within the sealing body (column 1 lines 9-35). Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the arc tube of Uemura et al ('580) with the pipe material of Torikai et al ('314). Motivation to combine would be to create a functional gradient within the sealing body.

In regard to claim 2, Uemura et al ('580) teach the light emitting tube has a thickness of 0.25mm to 1.2mm (paragraphs 53-56 and 62).

In regard to claims 4 and 5, Uemura et al ('580) teach a light emitting tube that has a substantially cylindrical shape (see figure 1) that has a ratio  $d/L$  of an outside diameter  $d$  to a whole length  $L$  ranging from 0.2 to 0.5 (Uemura's outside diameter is OD in figure 9, paragraph 75 has OD = 6.5 mm; whole length in  $L+p_2+p_2$  figure 10, paragraph 75 has  $L=4.2\text{mm}$  and  $p_2=7\text{mm}$ ; so the Applicant's " $d/L$ " is Uemura  $6.5/18.2=0.4$ ). Uemura continues to teach that both ends of the light emitting tube are sealed (see figure 1). Uemura et al ('529) are silent regarding the limitation that the sealant are pipes made of molybdenum. Torikai et al ('314) teaches electrodes fixed and held by pipes (7; see figure 1; column 2 lines 19-20) made from molybdenum (column 2 lines 20-21), in order to create a functional gradient within the sealing body (column 1 lines 9-35). Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the arc tube of Uemura et al ('580) with the pipe

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material of Torikai et al ('314). Motivation to combine would be to create a functional gradient within the sealing body.

Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uemura et al (US 20020158580) in view of Torikai et al (US 6320314) and Uchiyama et al (EP 0859246).

In regard to claims 3 and 6, Uemura et al ('580) teach an arc tube for a discharge bulb (1; figures 9 and 10; paragraphs 70-74) in which both ends of a light emitting tube inserting electrodes (1a1; paragraph 40) respectively are sealed and a closed space having the electrodes opposed to each other (see figure 1) and filled with a light-emitting substance (not shown in figures; paragraphs 4, 9, 42, and 59) with a rare gas for starting is provided in the light emitting tube (paragraph 42), wherein the light-emitting tube comprises translucent ceramics (paragraph 41) formed substantially cylindrically (see figures 1, 9 and 10). Uemura continues to teach that both ends of the light emitting tube are sealed (see figure 1). Uemura et al ('529) are silent regarding the limitation that the sealant are pipes made of molybdenum, and that the light emitting tube has a parallel ray transmittance of 20% or less and a whole ray transmittance of 85% or more. Torikai et al ('314) teaches electrodes fixed and held by pipes (7; see figure 1; column 2 lines 19-20) made from molybdenum (column 2 lines 20-21). Uchiyama et al (EP 0859246) teach a light emitting tube (paragraph 48) that has a parallel ray transmittance of 20% or less (see figure 6) and a whole ray transmittance of 85% or more (paragraphs 46) in order to improve the viewing angle of the device (paragraph 1). Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to modify the arc tube of Uemura et al ('580) with the transmittance of Uchiyama et al ('246) and the sealing pipes of Torikai et al ('314). Motivation to combine would be to improve the viewing angle of the device and ease the manufacturing process.

***Response to Arguments***

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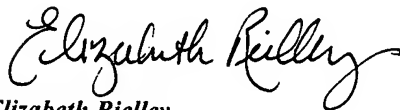
Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth A. Rielley whose telephone number is 571-272-2117. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



*Elizabeth Rielley*

***Examiner***  
***Art Unit 2879***



**MARICELI SANTIAGO**  
**PRIMARY EXAMINER**